THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte JAMES R. QUARTARONE, KENNETH E. BARTHELEMY,
 WILLIAM M. CICCHELLI and GEORGE V. MORRIS

Appeal No. 95-4984 Application No. 08/038,369¹

ON BRIEF

Before KIMLIN, JOHN D. SMITH and WARREN, <u>Administrative Patent</u> <u>Judges</u>.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claim 15, the only claim remaining in the present application. Claim 15 reads as follows:

¹ Application for patent filed March 29, 1993.

- 15. A process of coating a given surface of a heat sensitive metal article with a curable powder coating, comprising the steps:
- elevating the metal article's temperature in an oven to a selected temperature;
- maintaining the metal article at approximately said selected temperature for a first period of time;
- withdrawing the metal article from the oven;
- spraying said curable powder coating onto said given surface of the metal article, said spraying being initiated essentially immediately after withdrawal of the metal article from the oven, said spraying comprising first and second spray sequences, said first spray sequence applying a coating layer having a thickness chosen to be adequate to fill pores in said given surface with said curable powder coating, said second spray sequence building up a total thickness of said curable powder coating resulting from both the first and second spray sequence to a total coating thickness over said given surface of the metal article;
- re-elevating the metal article's temperature in said oven to said selected temperature;
- maintaining the metal article at approximately said selected temperature for a second period of time;
- said selected temperature, said first period of time, and said second period of time being chosen based upon experimentally determined data which defines a curve plotting temperature versus time of heating for which the metal article retains a percentage of its non-heated tensile and yield strength characteristics after undergoing a plurality of heating/ cooling processes involved in at least two individual instant processes of coating;

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said selected temperature being chosen as a temperature value
 on said curve; and

the first and second periods of time being so chosen that the cumulative time consisting of said first and second periods of time does not exceed the time of heating on said curve corresponding to said selected temperature.

The examiner relies upon the following references as evidence of obviousness:

 Stueke
 4,685,985
 Aug. 11, 1987

 Okano et al. (Okano)
 4,865,882
 Sep. 12, 1989

Appellants' claimed invention is directed to a process of coating a surface of a metal article with a curable powder coating. The process entails (1) heating the metal article to a selected temperature and maintaining that temperature for a first period of time, (2) spraying a curable powder onto the metal surface immediately after withdrawing the metal from the oven, followed by spraying additional curable powder until the desired thickness of powder is achieved, (3) reheating the coated metal article to the same temperature employed during the initial heating, and (4) maintaining the coated metal article at that temperature for a second period of time. The selected temperature, the first period of time and the second period of time are "chosen based upon experimentally determined data which defines a curve plotting temperature

versus time of heating for which the metal article retains a percentage of its non-heated tensile and yield strength characteristics." According to page 8 of appellants' specification:

The experimentally or otherwise empirically obtained data includes data that predicts the effects of the predetermined preheat and cure cycles high-limit-of-heat-load-temperatures, the first predetermined period of time and the second predetermined period of time. The time and temperatures are selected such that the mechanical properties of the alloy are not degraded during the coating process.

Claim 15 stands rejected under 35 U.S.C. § 112, first paragraph.² Claim 15 also stands rejected under 35 U.S.C. § 103 as being unpatentable over Okano and Stueke.

We consider first the examiner's rejection of claim 15 under § 112, first paragraph.³ It is well settled that the

The Examiner's Answer only states an objection to the specification under 35 U.S.C. § 112, first paragraph. However, since both appellants and the examiner have fully briefed the issue as if the examiner finally rejected claim 15 under § 112, first paragraph, we consider the omission to be an oversight by the examiner, and we will decide the propriety of a formal rejection based on the examiner's objection.

³ Although the examiner refers to the description requirement in the statement of the objection, it is clear from the examiner's criticisms that the examiner is relying upon the enablement section of § 112, first paragraph. Since appellants have responded to the objection in like terms, we will consider the examiner's objection/rejection to be based

examiner has the initial burden of establishing lack of enablement by compelling reasoning or objective evidence that one of ordinary skill in the art would be unable to practice the claimed invention without at least resorting to undue experimentation. In re Strahilevitz, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982); <u>In re Armbruster</u>, 512 F.2d 676, 677, 185 USPQ 152, 153 (CCPA 1975); <u>In re Marzocchi</u>, 439 F.2d 220, 223, 169 USPQ 367, 369 (CCPA 1971). In the present case, the examiner states that the claim language "experimentally determined data" is not fully disclosed in the specification because the specification does not provide details such as the equipment used in obtaining the data, what data is processed and when is the test procedure performed. However, the fatal flaw in the examiner's objection/rejection is that it is totally devoid of the requisite compelling reasoning or objective evidence to support the legal conclusion that one of ordinary skill in the art would be unable to experimentally determine the particular selected temperature and duration of heating values that are required for the metal article to

upon the enablement requirement of 35 U.S.C. § 112, first paragraph.

retain a percentage of its non-heated tensile and yield strength. Indeed, the following statement appearing at page 9 of the Examiner's Answer totally undermines the examiner's finding of non-enablement: "The advantages of gathering experimentally obtained data, whether it be pre-process, online or post-process, and adjusting the operational parameters to better achieve the desired characteristics of the product is [sic, are] also well known in the art and would be within the limits of routine experimentation of cause effective variables" (emphasis added). Accordingly, since the examiner has failed to make out a prima facie case of non-enablement, we must reverse the examiner's rejection under § 112, first paragraph.

We will sustain the examiner's rejection of claim 15 under 35 U.S.C. § 103 for essentially those reasons expressed in the Answer, which we incorporate herein. We add the following primarily for emphasis.

The main thrust of appellants' argument for patentability is that whereas the appealed "claim is directed to a process by which the metal article does not lose an unacceptable

amount of tensile and yield strength characteristics"4 (page 6 of principal Brief), no disclosure or teaching of such a relationship between the coating parameters and the strength characteristics of the metal is found in Okano or Stueke (page 18 of principal brief). In appellants' words, "nowhere in Okano et al. or Stueke is there anything to suggest Appellants' claimed process for coating heat sensitive metal articles based on data relating to the metal article's tensile and yield strength characteristics where at least two coating processes are expected in the article's life cycle" (page 19 of principal brief).

In response to appellants' argument, the examiner offers the following at page 7 of the Answer:

The time and temperatures of the preheating and post-heating steps are operational parameters which are dependent upon the metal used, coating applied, specific end use, etc. It is known by those of ordinary skill in the art that the thermal history

⁴ The relevant claim language is "said selected temperature, said first period of time, and said second period of time being chosen based upon experimentally determined data which defines a curve plotting temperature versus time of heating for which the metal article retains a percentage of its non-heated tensile and yield strength characteristics after undergoing a plurality of heating/cooling processes involved in at least two individual instant processes of coating."

of a metal article has an effect on the integrity of the article. It is also well known not to preheat or postheat the substrate to a degree that will in any way effect [sic, affect] the structural characteristics, i.e., tensile and yield strength by fatigue testing. Therefore[,] it would have been obvious to obtain through routine experimentation the optimum pre-heat time and temperatures as argued above.

Appellants have not challenged or refuted the above-quoted factual determination, i.e., appellants have only argued that the relationship between time, temperature and strength of the metal is not disclosed in either of the applied references. Accordingly, inasmuch as appellants have not questioned the accuracy of the examiner's finding, which is reasonable on its face, nor demonstrated that it is clearly erroneous, we will accept as fact that one of ordinary skill in the art, at the time of filing the present application, understood that commercial metals have known relationships between time/temperature heating cycles and tensile and yield strength. <u>In re Fox</u>, 471 F.2d 1405, 1407, 176 USPQ 340, 341 (CCPA 1973); <u>In re Boon</u>, 439 F.2d 724, 727, 169 USPQ 231, 234, (CCPA 1971); <u>In re Ahlert</u>, 424 F.2d 1088, 1091, 165 USPQ 418, 421 (CCPA 1970); <u>In re Kunzmann</u>, 326 F.2d 424, 425 n.3, 140 USPQ 235, 236 n.3 (CCPA 1964). Indeed, it would appear that

appellants' own specification acknowledges that the claimed relationship was known in the art at the time of filing the present application. To wit, the specification states "[c]urrent methods of effectively applying such high-cure-temperature coatings to a thermally-massive part require that the part to be coated be heated in excess of temperatures at which the aluminum alloy begins to lose tensile/yield strength"

(page 3, lines 5-9), and "[a]s mentioned above, the heat treated aluminum alloy has a known temperature-time envelope above which point the particular alloy begins to lose its tensile/yield strength. This temperature-time envelope is defined by a curve unique to each aluminum alloy" (page 10, lines 4-8).

Accordingly, based upon the unrebutted, reasonable finding of the examiner, and the apparent admission by appellants in the present specification, we find that the examiner has drawn the proper legal conclusion that one of ordinary skill in the art would have found it obvious to rely upon known result-effective variables in order to experimentally determine the optimum, as well as acceptable,

time and temperature values for the specific metal utilized in a coating process of the type claimed. <u>In re Boesch</u>, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). As noted by the examiner, appellants have not made of record any objective evidence of unexpected results that serves to rebut the obviousness of the claimed process. <u>In re Merck & Co.</u>, 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986); <u>In re Klosak</u>,

455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972). While appellants assert at page 21 of the principal brief that "appealed claim 15 satisfies a long-recognized need of the United States Government," appellants have not met their burden of presenting objective evidence that factually establishes (1) the existence of any such long-felt need and (2) the requisite nexus between the satisfaction of the need and processes within the scope of the appealed claims.

In conclusion, the examiner's rejection of the appealed claim under 35 U.S.C. § 112, first paragraph, is reversed.

However, based on the foregoing and the reasons well-stated by the examiner, the examiner's rejection of the appealed claim

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under 35 U.S.C. § 103 is sustained. Accordingly, the examiner's decision rejecting the appealed claim is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under $37 \ \text{CFR} \ \S \ 1.136(a)$.

<u>AFFIRMED</u>

EDWARD C. KIMLIN)
Administrative Patent	Judge)
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JOHN D. SMITH) BOARD OF PATENT
Administrative Patent	Judge) APPEALS AND
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